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Introduction to PalmGHG – The RSPO greenhouse gas calculator for oil palm products

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PalmGHG has been developed by the RSPO Greenhouse Gas (GHG) Working Group 2. It is a spreadsheet that quantifies the major sources of emissions and sequestration for a palm oil mill and its supply base, including estates and outgrowers, and is compatible with standard international GHG accounting methodologies. The calculator is flexible, allowing for different crop rotation lengths and alternatives to the default values. It calculates the total net emissions per ha, allocates these to co-products, and expresses them as t CO_2e/t palm product, e.g. crude palm oil (CPO). The calculations can be done on an annual basis: this allows for identification of principal emission sources for management purposes; regular reporting, internally to the company and externally to the supply chain; and monitoring.

A pilot study has been carried out in 2011 on nine RSPO companies, to determine its ease of use, and suitability of PalmGHG as a management tool. Results from eight mills gave an average of 1.03t CO_2e/t CPO, with a wide range of -0.07 to +2.46t CO_2e/t CPO. Previous land use and the percentage of the area under peat were the main causes of the variation.

PalmGHG readily allows manipulation of input data to test management interventions. Results of scenario testing are given for a set of dummy data. The results show that high emissions result from clearing logged forest or peat, and conversely that very low (negative) emissions result from clearing low biomass land such as grassland. Net emissions below 0.5t CO_2e/t CPO can be obtained from a mature industry that is replanting palms and capturing methane and generating electricity from the biogas.

Further modifications to PalmGHG are being made, to amend default values and include calculations for biodiesel and other co-products. The updated calculator will then be tested through peer review, and completed by simplifying procedures for data entry, and providing documentation.